# Open Completion Proctectomy with Creation of J-pouch

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A J-pouch, also known as an ileoanal pouch, is a surgically constructed internal reservoir that is made from the small intestine and is designed to store and pass stool after the removal of the colon and rectum. More simply, a J-pouch surgery is performed to construct a rectum.

While individual patient circumstances can dictate specificities of the surgery, generally there are at least two and sometimes three separate surgeries involved. This can depend on the patient's nutritional status, hemodynamics and overall clinical status. For the purposes of this discussion, we will assume three surgeries are necessary. The first surgery is to remove the colon. The second surgery, specifically the completion proctectomy (removal of the remainder of the rectum) and the actual construction of an ileoanal anastomosis, will be the focus of this article. A third final surgery is performed to reverse a temporary diverting loop ileostomy after healing of the J-pouch surgery is completed.

## INDICATIONS

Ileoanal reservoir constructive surgery is commonly performed on individuals who have a history of ulcerative colitis (a form of inflammatory bowel disease) who are status post total colectomy with stoma/end ileostomy or on patients with a history of familial adenomal polyposis (FAP) who are status post total colectomy with stoma/end ileostomy. An additional indication for surgery on patients who otherwise qualify is the desire to discontinue use of the ostomy.

## LEARNING OBJECTIVES

- Identify the anatomy that is affected by a completion proctectomy and creation of ileoanal pouch surgery
- Explain the proper bowel technique that certified surgical technologists must use for this procedure
- Discuss what is required for successful anastomosis
- List what conditions or diseases cause the need for a completion proctectomy and creation of a J-pouch
- Review what concerns the certified surgical technologist must anticipate for this procedure

## PROPER BOWEL TECHNIQUE

Since this is a discussion about bowel surgery, it is of paramount importance that the certified surgical technologist adheres to the principles of bowel technique, namely ensuring that contaminated instruments are separated to prevent infection. Creating a surgical anastomosis of portions of bowel will require opening of the bowel and it is essential that the certified surgical technologist create a contamination zone to place instruments that become "dirty" as a part of this process. Clean and sterile instruments must be used when moving from bowel manipulation to other sterile areas to prevent cross-contamination (Maspero & Hull, 2023). Certified surgical technologists are vital in adhering to these protocols and should ensure that glove changes for the entire team are required at points during the surgical operation.

## OPEN COMPLETION PROCTECTOMY WITH A DIAGNOSIS OF CREATION OF ILEOANAL POUCH SURGERY

The surgical technologist and circulating nurse should utilize surgeon preference cards to ensure proper armamentarium in the OR. Instruments, sponges, needles and any other soft materials should be counted according to facility policy prior to the patient entering the operating room. The patient is then placed under anesthesia according to the facility's protocol.

It should be noted that in some cases, the colorectal surgeon may elect to have the patient undergo cystoscopy with bilateral ureteral stent placement in order to facilitate ureter identification intraoperatively during the abdominal surgery. In this case, the certified surgical technologist should have a separate cystoscopy table set up. After successful stent placement and subsequent Foley catheter insertion by the surgeon, the cystoscopy table can be torn down. The certified surgical technologist will then rescrub and don a new gown and gloves for the abdominal completion proctectomy procedure.

Prior to commencing the abdominal surgery, the surgeon will remove the stoma bag from the patient and discard it in a biohazard bag. Adhesive remover wipes will be utilized to clean the surrounding skin. A grounding pad should be applied in anticipation of monopolar electrosurgical pencil use. The patient will be placed in the lithotomy position and will be prepped and draped per surgeon preference and hospital policy. During the draping, the surgeon will cover the stoma with a Raytec sponge, and the certified surgical technologist should make note to the RN circulator for counting purposes.

A midline or Pfannenstiel incision is performed by the surgeon. Because this is the second surgery as described above, extensive lysis of adhesions and repair of expected intraabdominal injuries are repaired. An Alexis wound protector or Bookwalter retractor is utilized for optimal visualization.

The surgeon will direct attention towards "taking down" the prior end ileostomy stoma in anticipation of creating a new pouch. Bipolar energy in the form of Ligasure Impact or Enseal versus Kelly clamps with 0 Vicryl ties may be utilized to dissect mesentery. A GIA linear stapler and subsequent reload is utilized for this purpose with resultant specimen of ileostomy trim. As discussed above, the certified surgical technologist should adhere to protocols regarding proper bowel technique throughout with a designated area to place contaminated instruments.

The surgeon will dissect down to the rectum and mesorectum. During this process, the bilateral ureters will be identified by recognizing vermiculation and care taken to avoid damag-

## WHAT IS IT?

**Inflammatory bowel disease (IBD):** A chronic condition characterized by inflammation of the digestive tract. It primarily includes two disorders, namely Crohn's disease and ulcerative colitis. While Crohn's disease can occur anywhere in the digestive tract, it most often affects the end of the small intestine (the ileum). Ulcerative colitis, on the other hand, is restricted to the colon and rectum. Symptoms include abdominal pain, diarrhea, fatigue and weight loss. While the exact cause of IBD is unknown, it is believed to involve a combination of genetic, environmental and immune factors.

**Familial adenomal polyposis (FAP):** A rare inherited disorder characterized by the development of hundreds to thousands of polyps in the lining of the colon and rectum. Said polyps begin to appear in adolescence or early adulthood and increase in number over time. If left untreated, FAP nearly always leads to the development of colorectal cancer by age 40 or 50.

ing the ureters. The surgeon will need to ensure enough length of the small intestine to allow J-pouch creation and will monitor the progress throughout this stage. Of note, there are three essential elements that must be met in order to ensure a successful anastomosis. Namely, there must be no tension between the connecting intestinal parts; there must be no torsion of the connecting intestinal parts; and lastly, there must be adequate blood supply. Of note, the surgeon may choose to utilize indocyanine green dye with a laparoscopic camera with 0-degree scope to assist in ensuring adequate blood supply to the intestines.

The surgeon may perform rectal digitation to help determine adequate length of intestine to anus and the surgical technologist should be prepared to assist the surgeon with glove changes each time the surgeon performs a rectal exam. A Satinsky or other non-crushing vascular clamp is placed above the rectum just prior to the transection (completion proctectomy). A TA-30 stapler is utilized for this purpose.

The surgeon will again ensure the small bowel is able to reach the anal canal while creating a J-shape without tension or torsion. At this point, a side-to-side anastomosis is created using a GIA-100 stapler with reload are utilized to create a pouch that measures 15-18 cm in length. The surgeon may test the pouch with a saline filled Asepto syringe. An EEA stapler of the surgeon's choice should be opened at this point in anticipation of ultimate end-to-end anastomosis. Package will include both the stapler as well as an anvil. A purse-string stitch with 0 or 2-0 Prolene on an SH needle is then used around the open edges of the newly created pouch in anticipation of end-to-end anastomosis. The anvil of the stapler will be inserted with purse string tightened. The surgeon will ensure hemostasis and may use the Bovie monopolar cautery or Metzenbaum scissors to ensure the tissue is prepared for optimal stapler operation.

At this point, the surgeon will move to between the patient's legs in order to perform the ileal created pouch anastomosis. Both the surgeon and the assistant surgeon will ensure proper stapler placement and will have multiple checks prior to the actual firing of the stapler. After firing the stapler, the surgeon will use a hemostat to remove the proximal and distal anastomotic doughnuts from the stapler anvil to check that they are both intact with specimens sent to pathology.

After anastomosis, a leak test is then performed to ensure patency of the newly created J-pouch using the flexible sigmoidoscope. Of note, the appearance of the pouch appears to look like "owl eyes" because of the side-to-side anastomosis that created the reservoir. Post leak test, the surgeon will break and rescrub to don new gown and gloves.

**Successful Anastomosis Requires:**

No tension in the connected lengths of the intestine
No torsion or twising in the connected lengths of intestine
Adequate blood supply to connected lengths of intestine

To facilitate exudate and excess fluid removal status post-surgery, a #19 Blake drain is placed in the pelvis. A diverting loop ileostomy will be created to be utilized until the newly created ileoanal pouch heals. A rod and umbilical tape may be utilized in the creation of diverting ileostomy. Of note, umbilical tape is considered a countable item.

After creating a diverting loop ileostomy, the surgeon may irrigate the surgical wound and the entire surgical team changes gloves. The surgical wound closure can then begin. Depending on facility policy, a closing instrument set with a separate Mayo stand may be used for this purpose. Again, meticulous attention to bowel technique as discussed above is essential to reduce the risk of postoperative infection.

For wound closure, the fascia is closed with #1 PDS thereby closing the peritoneal cavity. Closing counts between RN circulator and certified surgical technologist takes place per facility policy. The skin is closed per surgeon preference and final count is performed. Surgical dressings are then applied to the incisions. The wound should be covered with fresh surgical towels in anticipation of stoma maturation. The diverting loop ileostomy then can be matured with 3-0

> Creating a surgical anastomosis of portions of bowel will require opening of the bowel and it is essential that the certified surgical technologist create a contamination zone to place instruments that become "dirty" as a part of this process.

| Tumor thrombus level |
| --- |
| **GIA (gastrointestinal anastomosis) Linear Stapler:** Places a double row of staples in a straight line with a blade that cuts between the rows. |
| **TA (thoracoabdominal) stapler:** Places two staggered rows of staples; no blade is present. |
| **EEA (end-to-end anastomosis) stapler:** A circular shaped stapler designed to create an end-to-end connection between two sections of the digestive tract. |

Chromic on an SH needle. The stoma appliance is cut with curved Mayo scissors and applied over the freshly matured ileostomy. Of note, the stoma appliance is not sterile and thus the scissors should not be returned to the back table.

Assuming no postoperative complications or wound healing issues, surgeons generally wait at least three months prior to considering permanent diverting ileostomy reversal.

A J-pouch can enhance a patient's quality of life tremendously since it eliminates the need for a stoma. This requires a holistic approach, of course, with proper postoperative care, regular follow-ups, and lifestyle adjustments. Patient education about diet as well as adequate hydration and bowel management is essential to help patients adapt to their "new normal." Finally, psychological support during all phases of surgery as well as postoperatively is essential to improve patient satisfaction and overall sense of well-being.

## AUTHOR'S BIO

Michaele L. LePage, CST, PhD. originally earned her surgical technology certification back in 1989 and has always been in the medical field. As the lead surgical technologist specializing in colorectal surgery at the prestigious Cleveland Clinic, she plays a crucial role in supporting complex surgical procedures. With extensive experience and a commitment to excellence, she has had the privilege of working with world-renowned colorectal surgeon, Dr. Steven Wexner, and has continually expanded her knowledge in this highly specialized field – something she still enjoys learning about every single day. Outside of work, she finds balance through her love of reading, her love of sports (especially football), acrylic painting, and caring for her beloved pets (better known as the LePage zoo).


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# Open Completion Proctectomy with Creation of J-pouch

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**1. What is the primary purpose of a J-pouch surgery?**
**a.** To remove the colon only
**b.** To construct a new rectum using the small intestine
**c.** To repair a hernia
**d.** To create an external ostomy bag

**2. Which condition is not an indication for J-pouch surgery?**
**a.** Ulcerative colitis
**b.** Familial adenomatous polyposis (FAP)
**c.** Crohn's disease in the small intestine
**d.** Status post total colectomy with stoma

**3. Which surgical tool is typically used to create the side-to-side anastomosis in J-pouch surgery?**
**a.** GIA-100 stapler
**b.** TA-30 stapler
**c.** Ligasure Impact
**d.** Bipolar energy scalpel

**4. What is the key consideration when performing an anastomosis between the small intestine and the anus?**
**a.** Ensuring minimal blood flow to the pouch
**b.** Ensuring no torsion or tension and adequate blood supply
**c.** Avoiding the use of surgical clamps
**d.** Ensuring the presence of the colon

**5. Which stapler is used for the rectum transection in the J-pouch surgery?**
**a.** GIA-100 stapler
**b.** TA-30 stapler
**c.** Enseal stapler
**d.** EEA-33 stapler

**6. What diagnostic tool may be used during J-pouch surgery to confirm blood supply to the intestines?**
**a.** CT scan
**b.** MRI
**c.** Indocyanine green dye with a laparoscopic camera
**d.** Ultrasound

**7. What is the primary purpose of the temporary diverting loop ileostomy created in J-pouch surgery?**
**a.** To allow immediate bowel movements through the pouch
**b.** To reduce the need for future surgeries
**c.** To divert stool while the J-pouch that you 000 no there heals
**d.** To permanently divert bowel movements to an external pouch

**8. What is a key complication that can arise if there is tension or torsion in the newly created J-pouch?**
**a.** Infection
**b.** Pouchitis
**c.** Anastomotic failure
**d.** Herniation

**9. What is the "leak test" performed after the creation of the J-pouch?**
**a.** A blood test to check for infections
**b.** A procedure using a flexible sigmoidoscope to check the pouch for leaks
**c.** A test using CT scans to check the integrity of the pouch
**d.** A urine test to check kidney function

**10. What is the approximate length of the J-pouch once it is created during the surgery?**
**a.** 5-7 cm
**b.** 10-12 cm
**c.** 15-18 cm
**d.** 20-22 cm

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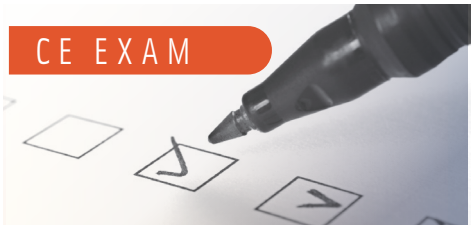


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